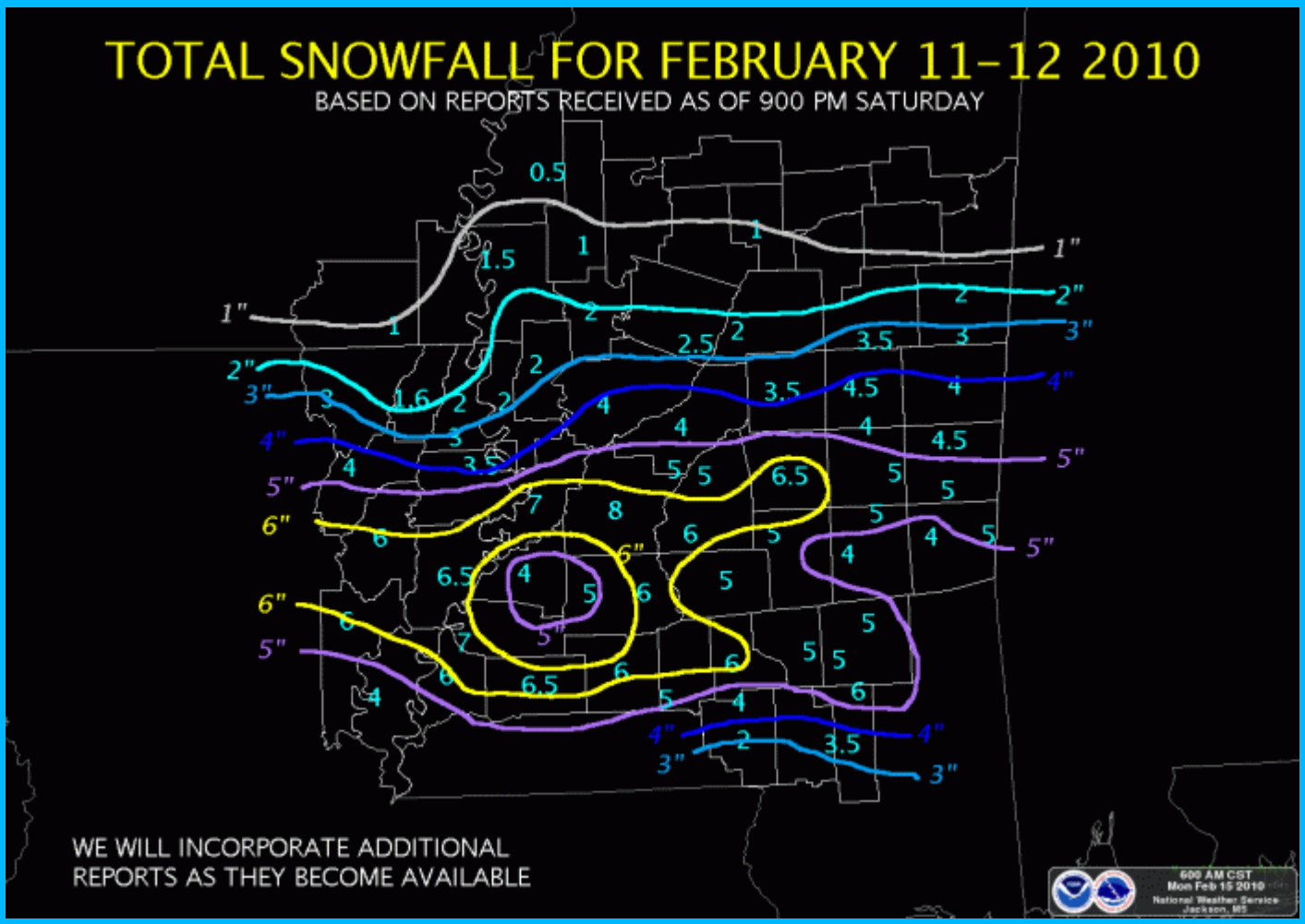
NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924) **U.S. DEPARTMENT OF COMMERCE** **NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION** **NATIONAL WEATHER SERVICE**	HYDROLOGIC SERVICE AREA (HSA) **WFO Jackson, Mississippi**
MONTHLY REPORT OF HYDROLOGIC CONDITIONS	REPORT FOR: MONTH: **February** YEAR: **2010**
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283	SIGNATURE **Alan E. Gerard, Meteorologist In-Charge** DATE **02/16/2010**

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

☐ **An X inside this box indicates that no river flooding occurred within this hydrologic service area.**



Synopsis...

The winter months (December through February) were one of the coldest on record for the ARKLAMISS Region. Meridian and Jackson recorded the 3rd and 4th coldest winters, respectively, since records began for each station. February 2010 turned out to be 4th and 5th coldest for Meridian and Jackson respectively. Jackson, MS has recorded the 9th highest snowfall totals for

the season from November through March. Rainfall for February 2010 was generally below normal over Hydrologic Service Area (HSA) with the exceptions: Southeast MS, portions of Southwest Mississippi, and southern portions of Northeast Louisiana.

High pressure prevailed on the first day of the month. On the 2nd, a fast moving cold front and an upper level disturbance pushed through the area bringing some light rainfall with amounts from 0.50 to 0.75 inches over Southwest and North Central Mississippi and less than 0.50 inches elsewhere. High pressure built into the area on the 3rd.

Low pressure developed off the Southeast Texas Coast on the 4th and moved across South Louisiana into North Florida by the morning of the 5th. Rainfall was heavy along and southeast of a line from Tensas Parish Louisiana to Lowndes County Mississippi where amounts ranged from 2.00 to 4.00 inches. Elsewhere, rainfall was less than 2.00 inches. Some heavier 24 hour rainfall totals ending at 7am on the 5th: 3.20 inches at Hattiesburg, MS; 3.10 inches at Shubuta, MS; 3.08 at St. Joseph, LA and Pat Harrison Waterway's Archusa Waterpark, MS; 3.04 at Sumrall, MS; and 3.03 inches at Purvis, MS. High pressure built into the HSA from the 5th until the 7th.

The 8th started out relatively mild until a fast moving cold front pushed across the HSA later in the day through early on the 9th. Rainfall ranged from 0.25 inch in Central Mississippi to 0.75 inch in Southeast Mississippi. Cold high pressure built into the region on the 10th and early on the 11th.

Late on the 10th and into the 11th, a vigorous upper level disturbance began moving eastward from the southwestern United States. A low pressure center began to develop in the western Gulf of Mexico and tracked south of Louisiana during the day on the 12th. On the afternoon of the 11th some light rain developed over south and southwest portions of the HSA. Through the evening this changed over to sleet and snow. By the morning of the 12th, snow was falling over most sections of the HSA. Snow fall from 3.00 to 5.00 inches occurred across South Mississippi while 4.00 to 8.00 inches of snow occurred over Central Mississippi and much of Northeast Louisiana. Northern sections of the HSA which included Southeast Arkansas and North Central Mississippi received from 3.00 inches to just a trace in our far northern counties. The 4.7 inches at the National Weather Service in Jackson was the 2nd largest February snow on record and the 10th overall largest snow event on record. By the afternoon of the 12th, snow had ended over most areas. High pressure built into the area on the 13th and early on the 14th.

A cold front pushed through the area on the 14th and into the 15th bringing rainfall and colder temperatures to the entire area. Rainfall amounts ranged from 0.25 to 0.75 inches. Cold temperature finally began to moderate on the 19th and 20th as high pressure shifted to the east.

From late on the 21st into the 22nd, another cold front moved across the region. Rainfall ranged from 0.10 to 0.75 inch across all but Southeast Mississippi where rainfall from 1.00 to 2.50 inches occurred. High pressure remained in place through late on the 23rd.

A fast moving cold front pushed through the area on the 24th, bringing some

light rain to Northeast Louisiana and Central Mississippi. Amounts were 0.50 inches or less. Cold high pressure built into the area on the 25th.

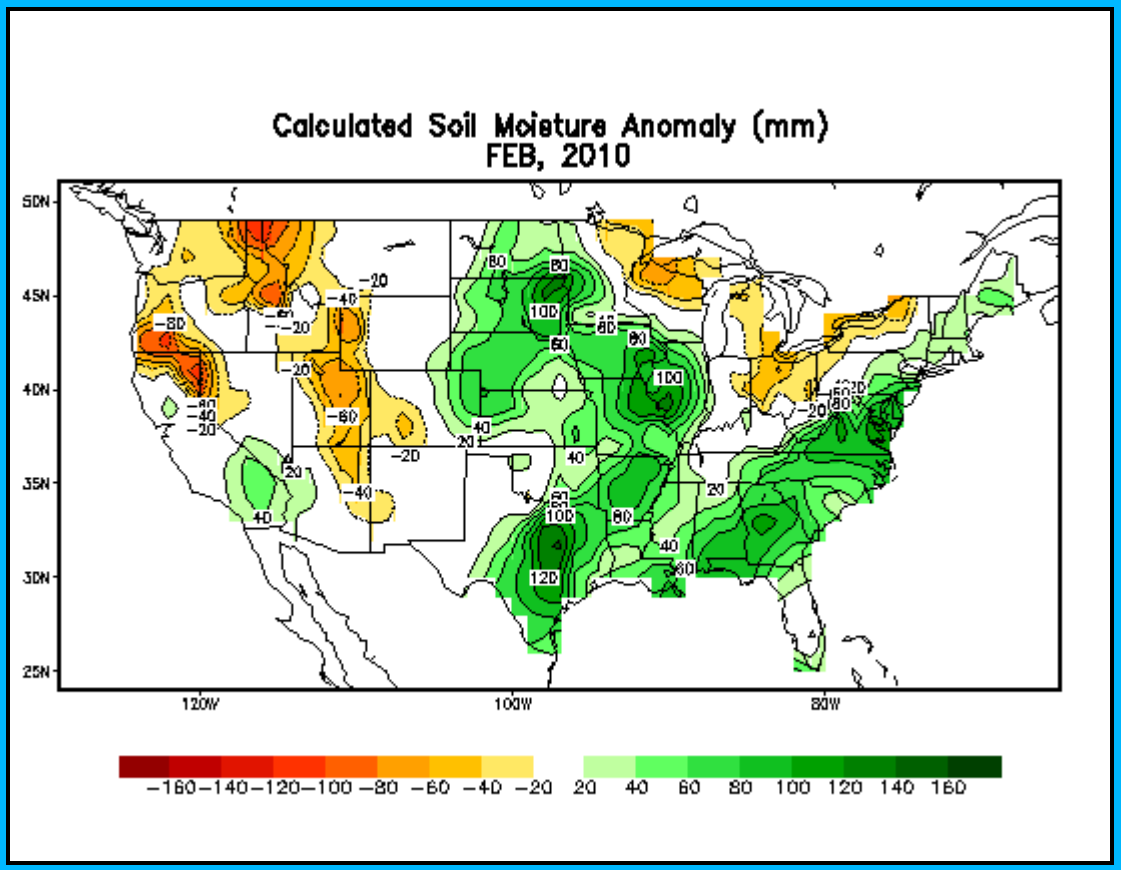
By the 26th, winds had shifted back to the south ahead of a low pressure system with an associated cold front situated over North Texas. This system pushed across southwestern portions of our service area. Rainfall was 0.50 inches or less across western and southern sections of the region with the exception of southern portions of Catahoula and Concordia Parishes where rainfall ranged from 0.75 to 1.00 inch. Weak high pressure built into the area through the end of the month.

River and Soil Conditions...

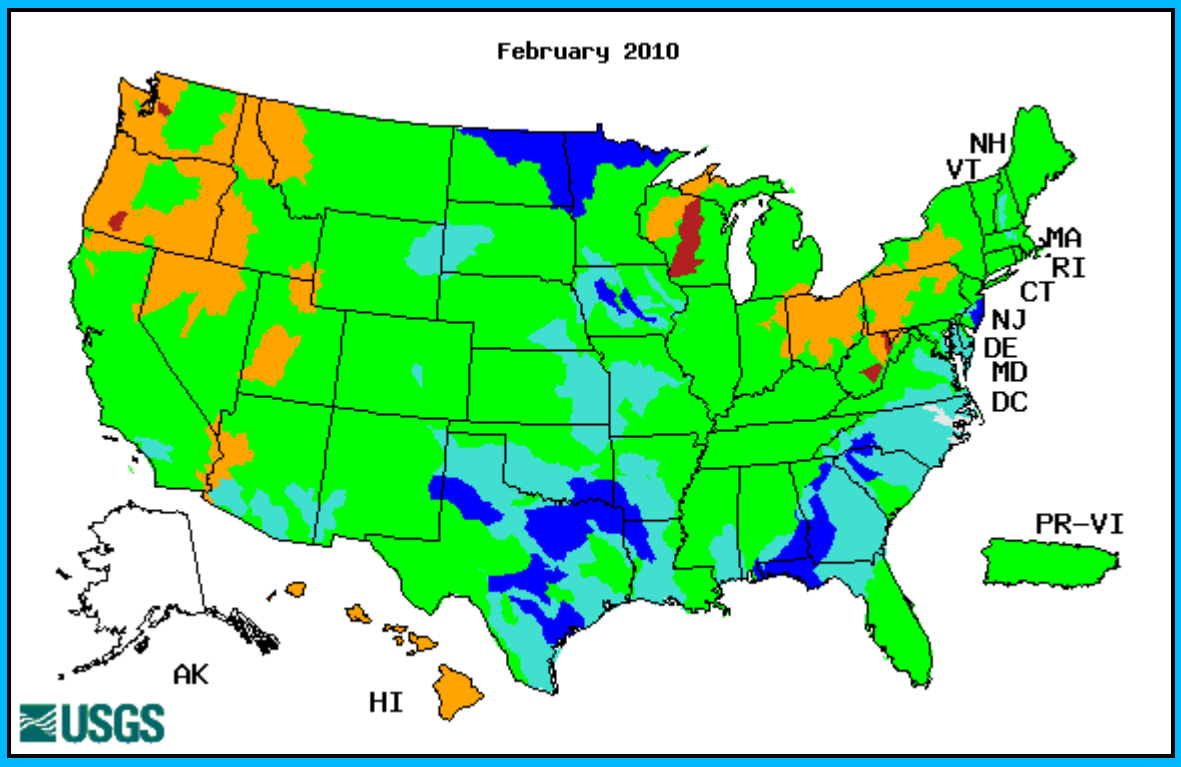
Rainfall was 75 percent of normal over all but Southeast Mississippi, portions of Southwest Mississippi, and southern portions of Northeast Louisiana. Rainfall ranged from near normal to 200 percent of normal over these areas

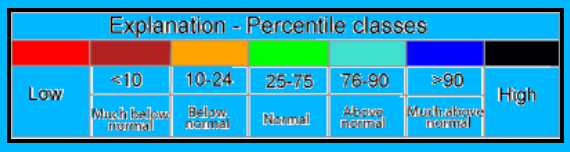
Even with well below rainfall totals, soil moisture continues to run 1.50 to 2.50 inches above normal across areas north of I-20. Below I-20, soil moisture was 2.00 to 2.50 inches above normal.

Soil Moisture anomaly (departure from normal): (25.4mm = 1 inch)



The United States Geological Survey's (USGS) February 2010 river streamflow records were compared with all historical February streamflow records. Streamflow was above normal in the Pascagoula River Basin and in Southeast Arkansas and portions of Northeast Louisiana. Streamflow was near normal over the remainder of the river basins in the HSA.





Heavy rainfall during the first week of the month caused minor flooding across the Pearl and Big Black Rivers and Tallahala Creek. The Yazoo River System remained high due to increased discharges from the flood control reservoirs. The Yalobusha at Whaley and the Yazoo at Yazoo City remained above flood stage for most of the month. Backwater from the Ouachita and heavy rainfall during the first week of the month kept the Lower Bouef River above flood stage for much of the month.

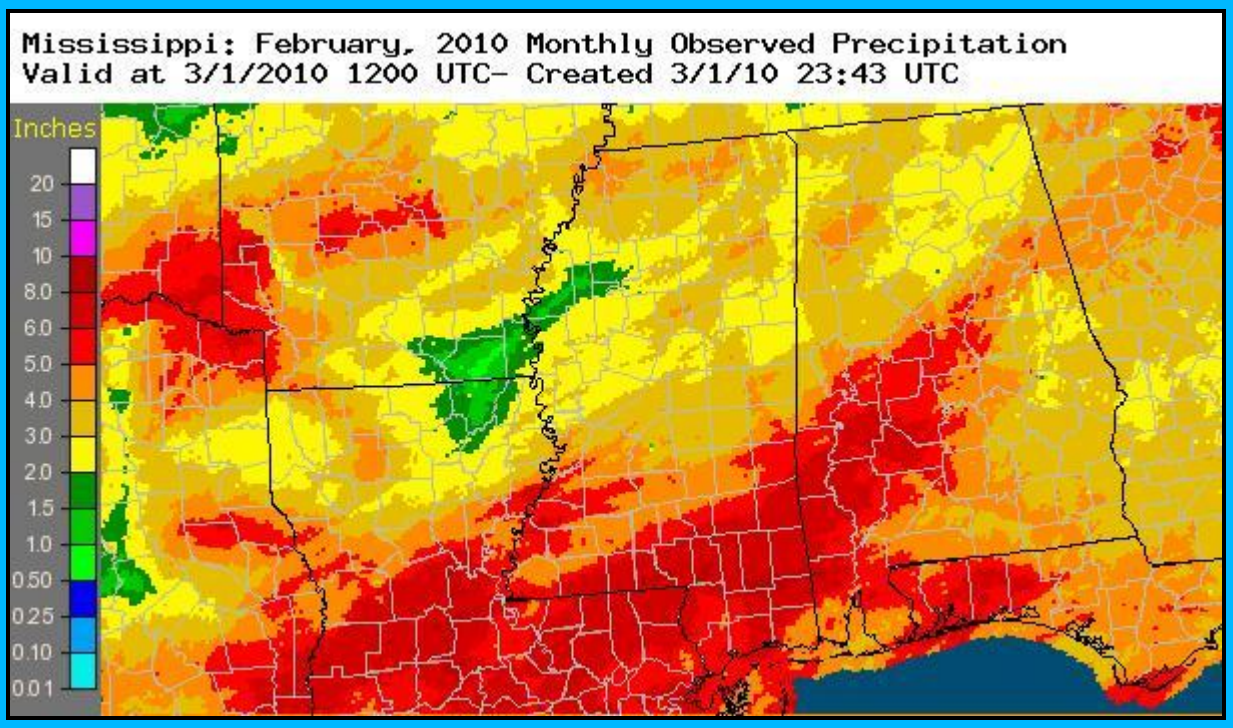
Based on current soil moisture conditions, current streamflow conditions, and an expected normal rainfall over the HSA, the flood potential for next 60 to 90 days is expected to be:

Pearl River System:	Above normal.
Yazoo River System:	Above normal.
Big Black River System:	Above normal.
Homochitto River System:	Above normal.
Pascagoula River System:	Above normal.
Northeast LA and Southeast AR:	Above normal.

***Tombigbee River System*:** **Above normal.**
Mississippi River: **Above normal.**

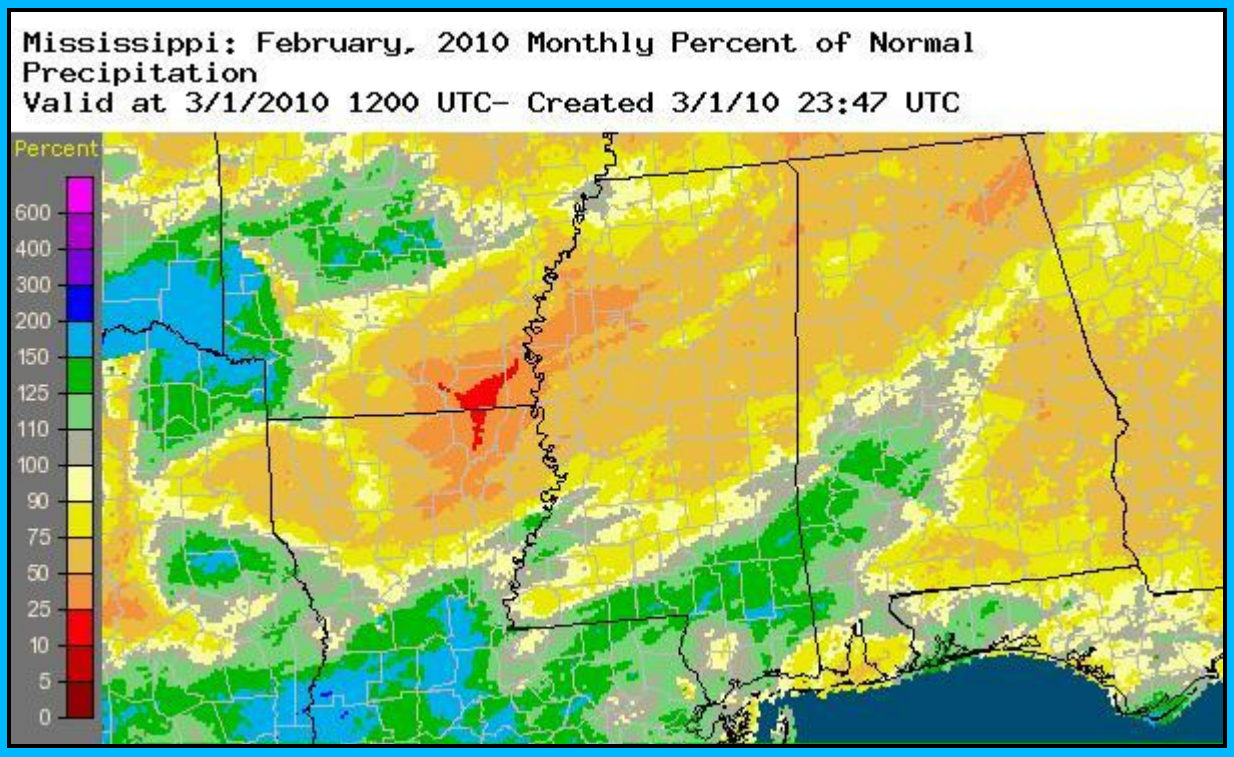
Rainfall for the month of February

The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on January 31st until 7 am on February 28th were: 8.93 inches at Hattiesburg, MS; 8.30 inches at Purvis, MS; 7.95 inches at Sumrall, MS; 6.92 inches at Natchez, MS; 6.46 inches at Larto Lake and St. Joseph, LA; 6.32 inches at Columbia, MS; and 6.23 inches at Jonesville L&D, LA.



February 2010 Rainfall Estimates

Note: Green area above looks to be too low. Rainfall should be around 2 to 2 and half inches.



February 2010 Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

Note: Red area is too low and should be 25 to 50 percent of normal.

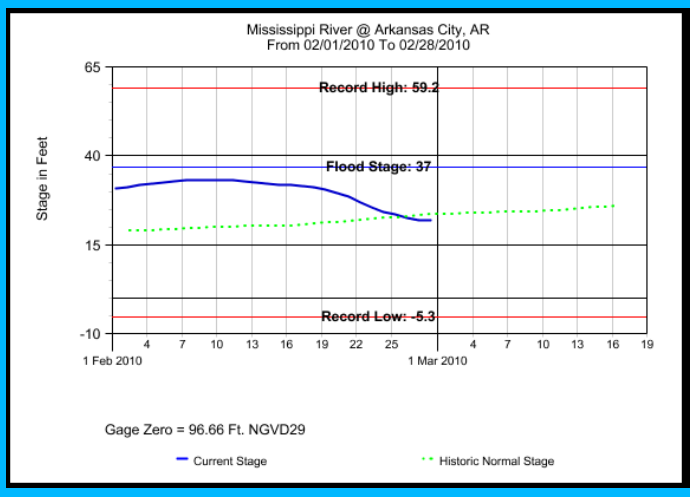
February rainfall for Selected Cities...

City (Airport)	February Rainfall	Departure from normal	2010 Rainfall	2010 Departure from Normal
Jackson, MS	4.09	-0.41	9.24	-0.93
Meridian, MS	4.54	-0.81	9.15	-2.12
Greenwood, MS	2.33	-1.87	7.94	-1.56
Greenville, MS	2.41	-1.54	7.82	-1.45
Hattiesburg, MS	7.94	+2.87	11.22	-0.89
Vicksburg, MS	3.35	-1.54	7.78	-3.20

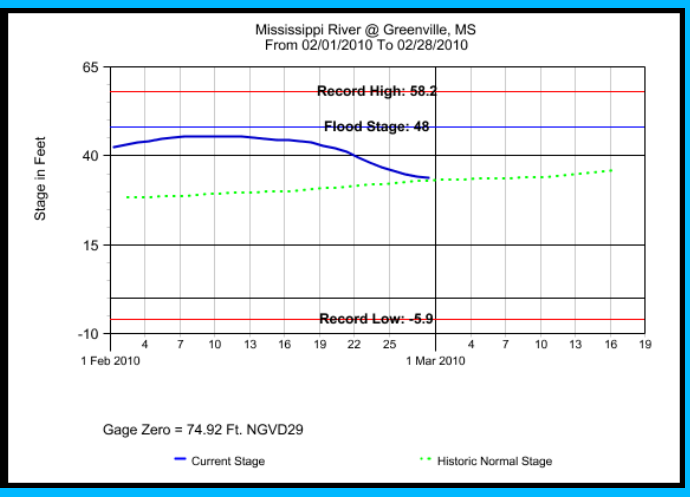
Mississippi River...

Mississippi River Plots for February, 2010

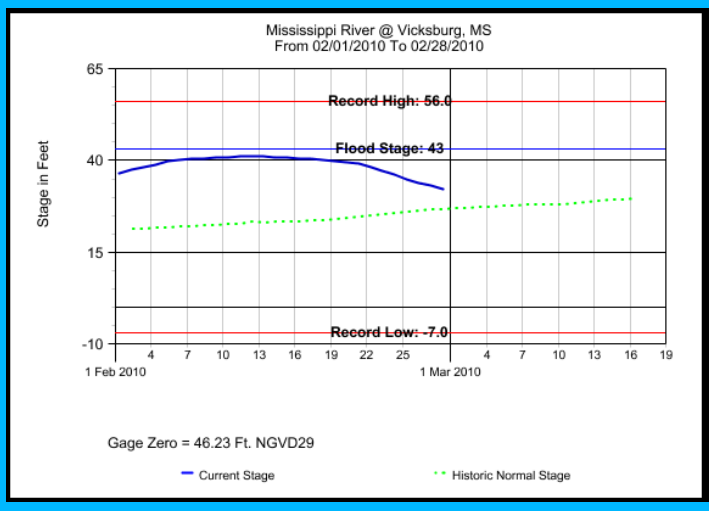
Plots Courtesy of the United States Army Corps of Engineers



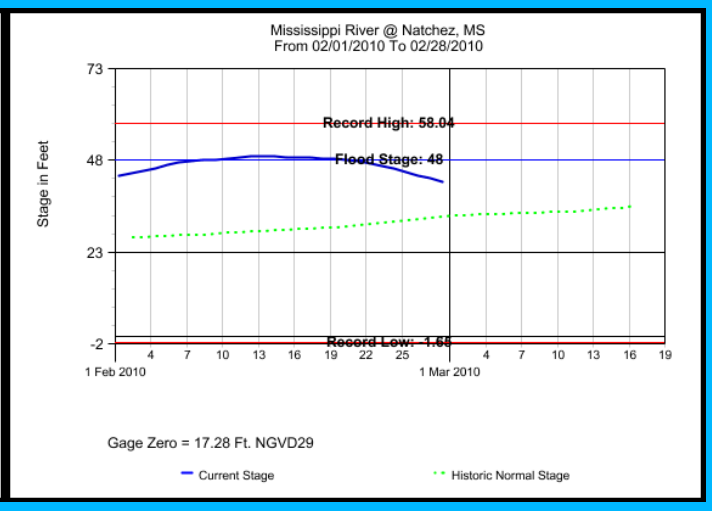
Arkansas City, AR



Greenville, MS



Vicksburg, MS



Natchez, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	33.40	02/08/10	21.73	02/27/10
Greenville, MS	48	45.67	02/10/10	33.81	02/28/10
Vicksburg, MS	43	41.14	02/11/10	31.77	02/28/10
Natchez, MS	48	49.05	02/13/10	41.52	02/28/10

Total Flood Warning products issued: 16
Total Flood Statement products issued: 252

Daily Rainfall Products (RRA'S) issued: 28
Daily River Forecast Products (RVS'S) issued: 28
Daily River Stage products (RVA'S) issued: 28

Marty V. Pope

Service Hydrologist

&

Latrice Maxie

Assistant Hydrologist/Observing Program Leader (OPL)

Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District